

## Maths - Knowledge Sequencing at Knavesmire Primary

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| <b>Intent:</b>                          | At Knavesmire, our Intent is that every pupil accesses a broad and balanced mathematical experience through the statutory framework for the early years foundation stage and the national curriculum. Maths is presented as a challenging, exciting, creative and relevant subject. We believe that practical and outdoor activities help children to develop and understand a range of mathematical concepts.   |
| <b>Substantive knowledge in Maths :</b> | Children know about the composition of numbers <20 and recognise numerical pattern to count beyond this. They can match numeral to quantity and they can count within this range, accurately with a range of strategies. They can compare lengths, weights, heights and capacity and use relevant vocabulary; they also have strategies for working out how to measure using non-standard units to compare. They recognise, use and name some 2d and 3d shapes and can create and extend patterns including repeating pattern. They understand odd and even and know how to share equally. |
| <b>Disciplinary knowledge in Maths:</b> | Children use the Maths that they have learnt throughout the day. They use it in their play when they are exploring capacity in the water tray and shapes on the construction site. They explore and practise counting when lining up and doing the register to see how many children are in. They share snack out evenly at break time. They apply their Maths in a wide range of everyday situations.   |
| <b>Maths:</b>                           | Giving children the skills and acquisition of Maths knowledge that they can apply to real life situations.   |



## EYFS Maths

### Nursery

Early Math's principles are taught through focus sessions and areas of provision in Nursery. Children are introduced to key skills that set them up for success in Reception through areas of provision, focus sessions and Maths being re-iterated through everything they do from counting out snack to spotting repeating patterns on clothing ect. We plan Maths building down from the skills and knowledge that children need to access White Rose Maths in Reception.

Children leave Nursery ready for Reception with the basic Maths skills ready to move onto more in depth learning in Reception. They can **verbally count past 5** as well as **count objects** by **stopping on the last number** that they say. They understand that **numbers represent objects** and start to **make comparisons** between objects and amounts. They develop the basic number sense needed to be able to **subitise** up to 3 objects and they can **match numerals to amounts** up to 5. They know what **numerals look like** and they are beginning to mark make to copy these. Children have awareness of **shapes** and know about some simple patterns including being able to **continue a repeating pattern**.

### Key Texts

My mum and dad make me laugh, Nursery Rhymes, Fish pond songs, Pirate Pete, Pete the Cat.

| Count |   | Order           |   | Subitise          |  |
|-------|---|-----------------|---|-------------------|--|
|       | <ul style="list-style-type: none"> <li>Knows how to <b>say one number</b> for each item in order: 1,2,3,4,5.</li> <li>Knows how to <b>count the total</b> number of objects by <b>stopping</b> on the last number.</li> <li>Knows how to <b>recite numbers past 5</b>.</li> </ul> |                 | <ul style="list-style-type: none"> <li><b>Compare quantities</b> and use relevant <b>vocabulary</b> – more/fewer.</li> <li>Knows and uses some <b>positional language</b> such as behind, next to.</li> <li>Make <b>comparisons</b> between objects.</li> <li>Begins to <b>sequence events</b> using <b>first</b> and <b>then</b>.</li> </ul> |                   | <ul style="list-style-type: none"> <li>Know how to subitise <b>up to 3</b> objects.</li> </ul> |
| Match |   | Multiply/Divide |   | Shape and Pattern |  |
|       | <ul style="list-style-type: none"> <li><b>Links numerals</b> and amounts</li> </ul>   |                 |   |                   | <ul style="list-style-type: none"> <li>Knows some 2d and 3d</li> </ul>                         |



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|  | <p><b>up to 5.</b></p> <ul style="list-style-type: none"><li>• Knows how some <b>numerals look</b> and has a go at <b>mark making</b> some of these.</li></ul> |  | <p>shapes and can talk about some properties.</p> <ul style="list-style-type: none"><li>• Knows how to <b>use</b> these shapes to their desired effect in <b>play</b> situations.</li><li>• Knows and <b>describes</b> different <b>patterns</b>.</li><li>• Knows how to <b>continue and create repeating patterns</b>.</li></ul> |
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## EYFS Maths

### Reception

Children in Reception take part in 3 focus Math's sessions a week, the skills are embedded through areas of provision, morning calendar and every opportunity throughout the day. Children take part in a fortnightly math's activity.

Children build on skills taught in Nursery and leave Reception ready to take on the challenges of Year 1 and the National Curriculum. They understand the **concept of accurate counting** and know strategies to do this. They have a deep understanding of numbers to **10** and know the **composition** of each number as well as being able to identify the numeral and amount in a range of **contexts**. They have a good knowledge of **comparisons and ordering** and are developing strategies to measure and compare **weight, length and capacity**. They build on the **subitising** skills learnt in Nursery and are able to know how many they see up to **5** without counting. They build foundations for further multiplication and division by understanding **how to share evenly** and understanding the concept of **odd and even** numbers and **numerical patterns**. They build on their knowledge of **shapes** and start to **compose and manipulate** them as well as using them in **repeating patterns**.

### Key Texts

Number songs, Rhyme time, Pete the Cat, The Crayons Book of Numbers, Spindarella, 1,2, 3 at the zoo, Noahs Ark, Night Monkey Day Monkey, Frog and Toad, The Ugly 5, 9 naughty Kittens, Pattern Fish, Round is the Moon Shape, How do Dinosaurs Count to 10? 5 Little Friends, There's a hole in my bucket.

| Count/Addition/Subtraction   | Order   | Subitise   |
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| <ul style="list-style-type: none"><li>• Knows how to <b>count objects</b>, actions, sounds ect <b>accurately</b> using different <b>strategies</b>.</li><li>• Knows how to <b>count beyond ten</b>.</li><li>• Knows <b>number bonds</b> to 5 and some to 10.</li><li>• Knows and has a <b>deep</b></li></ul> | <ul style="list-style-type: none"><li>• Knows how to and <b>understands comparing numbers</b>.</li><li>• Knows <b>ways to explore</b> the composition of numbers to <b>10</b>.</li><li>• Knows how to <b>compare weight, length and capacity</b> using <b>non-standard measurement</b> methods such</li></ul> | <ul style="list-style-type: none"><li>• Knows how many of something they see without counting, <b>up to 5</b>.</li></ul> |



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| <p><b>understanding</b> of numbers to 10 including the composition of each number.</p> <ul style="list-style-type: none"> <li>• Children know the <b>vocabulary more/less</b> than and can confidently count forwards and back up to the numbers they have learnt.</li> <li>• Begin to <b>use a number line</b> to make small jumps and aid calculations.</li> <li>• Children know that the <b>addition</b> of numbers/objects is adding the total together.</li> <li>• Know that <b>subtracting is taking away</b> and can work out simple addition and subtraction problems using objects and pictorial representations.</li> <li>• Start to <b>form some numbers</b> correctly.</li> </ul> | <p>as measuring with string or blocks.</p> <ul style="list-style-type: none"> <li>• Can explore and represent <b>patterns within numbers</b> up to 10, including <b>evens</b> and <b>odds, double facts</b> and how quantities can be distributed <b>equally</b>.</li> </ul> |  |
| <b>Match</b>  | <b>Multiply/Divide</b>   | <b>Shape and Pattern</b>   |
| <p>Knows how to <b>link the numeral</b> with its <b>cardinal number value</b>.</p>  | <ul style="list-style-type: none"> <li>• Knows how to <b>share evenly</b>.</li> <li>• Knows what <b>odd and even</b> numbers are.</li> <li>• Can <b>split a group</b> evenly to find the answer.</li> </ul>  | <ul style="list-style-type: none"> <li>• Knows how to <b>select, rotate and manipulate shapes</b> in order to develop spatial reasoning skills and knows <b>some shape names</b>.</li> </ul> |



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|  |  |  |  | <ul style="list-style-type: none"><li>• Knows how to <b>compose and decompose</b> shapes so that children recognise a shape can have other shapes within it, just as numbers can.</li><li>• Knows how to continue, copy and <b>extend repeating patterns</b>.</li></ul> |
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## Moving into Year 1 and the National Curriculum

In Year 1 children build in the knowledge that they have acquired in Early Years through deepening their understanding of numerical patterns and developing the ability to **count to and across to 100**. They count in **2s, 5s and 10s** and **write the numerals and words** for numbers <20. They become secure with **simple addition** and **subtraction** and can **read, record and solve** problems relating to these. They build on sharing knowledge and learn to **solve simple multiplication and division problems**. They further their knowledge of number and measurement and begin to learn **fractions**. They start to use **standard measurements** to measure accurately and they **know, describe and create** shapes and patterns. Children continue learning with the White Rose programme as a base and this builds suitably from the learning in Reception.

| Number and place value  | Addition and Subtraction   | Multiplication and Division   |
|---|--|---|
| <ul style="list-style-type: none"> <li>Knows how to <b>count to and across 100, forwards and backwards</b>, beginning with 0 or 1, or <b>from any given number</b>.</li> <li>Knows how to <b>count, read and write</b> numbers to 100 in numerals.</li> <li>Identify <b>one more and one less</b> than a <b>given number</b>.</li> <li>Knows how to count in multiples of <b>twos, fives and tens</b>.</li> <li>Knows how to identify and represent numbers using objects and <b>pictorial representations</b> including the <b>number line</b>, and use the</li> </ul> | <ul style="list-style-type: none"> <li>Knows how to <b>read, write and interpret</b> mathematical statements involving addition, subtraction and equals signs</li> <li>Can <b>represent and use number bonds</b> and related <b>subtraction facts</b> within 20.</li> <li>Can <b>add and subtract</b> one-digit and <b>two-digit</b> numbers to <b>20</b>, including zero.</li> <li>Knows how to <b>solve one-step problems</b> that involve addition and subtraction, using concrete objects and pictorial representations, and <b>missing number problems</b> such as <math>7 = \square - 9</math>.</li> </ul> | <ul style="list-style-type: none"> <li>Know how to solve <b>one-step problems</b> involving multiplication and division, by <b>calculating the answer</b> using concrete objects, <b>pictorial representations</b> and <b>arrays</b> with the <b>support</b> of the teacher.</li> </ul> |

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|                  | <p><b>language</b> of: equal to, more than, less than (fewer), most, least.</p> <ul style="list-style-type: none"> <li>• Can <b>read and write numbers from 1 to 20</b> in numerals and words.</li> </ul>  |   |   |                          |
| <b>Fractions</b> |  | <b>Measurement</b>  |   | <b>Shape and Pattern</b> |
|                  | <ul style="list-style-type: none"> <li>• Know how to recognise, find and name a half as one of two equal parts of an object, shape or quantity.</li> <li>• Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</li> </ul> | <ul style="list-style-type: none"> <li>• Know how to <b>compare, describe and solve practical problems</b> for: lengths and heights, mass/weight, capacity and volume, and time.</li> <li>• <b>Measure</b> and begin to <b>record</b> the following: lengths and heights, mass/weight, capacity and volume and time (hours, minutes, seconds.)</li> <li>• Know the <b>value</b> of different denominations of <b>coins</b> and notes.</li> <li>• Know the sequence of events in <b>chronological order</b> using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</li> </ul> | <ul style="list-style-type: none"> <li>• Know and <b>recognise and name</b> common <b>2-D and 3-D shapes</b>,</li> <li>• Describe <b>position, direction and movement</b>, including whole, half, quarter and three quarter turns.</li> </ul> |                          |





- Know and use **language relating to dates**, including days of the week, weeks, months and years
- Know how to **tell the time** to the **hour and half past the hour** and draw the hands on a clock face to show these times.